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SOIL CONSERVATION SERVICE
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RESOLUTIONS OF THE

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DIRECTION OF EROSION CONTROL PROGRAMS WITH RELATION TO RANGE LANDS

1. Because of quicker response, less cost, and greater returns per dollar expended, priority of control operations will from an erosion standpoint be given to those areas having the highest vegetation potential.

2. Lands of low grass potential on which accelerated erosion cannot be overcome by control operations, even under good range management practices, should be retired from range use. In general, until such retirement is effected, no erosion control operations will be instituted.

3. Erosion control operations will not be undertaken until the operator has agreed to reduce to carrying capacity, such reductions to be made as soon as possible but not later than one year after signing the agreement. In the future, it is desirable that reductions be made to carrying capacity before work is started on the ranch unit. An exception may be made in the case of small operators who have already a minimum number of livestock such as workstock and milk cows and who agree to adjust the use of grazing land to carrying capacity by such means as providing supplemental pasturage on crop land and increasing harvested feed supplies.

4. Agreements should be made only with operators who can reasonably be expected to retain control of the area involved during the life of the agreement.

5. Erosion control work under cooperative agreement should include forest and wildlife improvement work where these resources are present or potential. Stocking should be on a scale necessary to protect all interests involved including municipal or domestic water supplies.

INTENSITY OF EROSION CONTROL PROGRAMS WITH REFERENCE TO RANGE LANDS

No attempt has been made by the committee to discuss this subject in the detail which obviously is required. This does not appear feasible or advisable at this time, but it is believed that the following general statement should prove of value as a guide in the consideration of this important question.

The intensity of erosion control programs with reference to range lands is dependent upon the following factors:

1. General objectives as applied to the district or large watershed projects.

2. Specific objectives as applied to the drainage under consideration.

3. The results which may be expected under varying intensities of treatment considering influence of existing water rights.

4. The cost of the various types and intensities of treatment.

5. Relation between cost and immediate as well as ultimate benefits.

The first two factors may be determined and stated in rather definite terms. The third factor cannot be determined definitely without further experimentation, and it will be necessary to make certain assumptions for immediate operation. The fourth factor can be estimated, using as a basis past and present experience. The fifth factor covering justification can be determined after a careful study of existing conditions and the need for treatment.

To assist in the determination of the intensity and minimum needs of treatment, it is believed possible to classify range land in terms of erosion potential based on the correlation of vegetative cover and soil types. Once the land is classified, the minimum treatment which will produce the desired results may be indicated. The following classifications and minimum treatment requirements for each are suggested:

(a) Erosion stabilized by an adequate cover.

Continued proper range management in order to maintain a cover adequate to prevent erosion is recommended. No structural control measures should be contemplated unless required to protect land and improvements below.

(b) Erosion active, poor to fair vegetative cover, soils of high potential forage production.

Land under this classification should receive first attention not only because of its value but also because of its effect on land and improvements below. If erosion is in an early stage, proper range management with reduction of livestock to the carrying capacity is recommended with no supplemental structural treatment except that necessary to control further head or lateral cutting.

If erosion is in a more advanced stage, temporary or permanent retirement is recommended. Structural control measures should be limited to slopes and soil types where effective results may be expected, to areas where range and soil men indicate the need for supplementary treatment, and to areas subject to head and lateral cutting.

Major retention and detention structures may be required for retention of silt, stabilization of stream beds and regulation of flood flows.

Artificial revegetation may be required as a supplementary treatment measure within this classification.

Rodent control should receive careful consideration within this classification.

(c) Erosion active, poor vegetative cover, soils of low potential forage production.

Proper range management with reduction of livestock to carrying capacity is required. Permanent structural control measures may be necessary to control further cutting and to protect land and improvements below. Major structures may be justified under the latter condition along with retirement from use, temporary or permanent.

(d) Erosion formerly active but now partially stabilized by vegetative cover, rock, gravel, etc.

Proper range management with reduction of livestock to carrying capacity is required. Structural control measures should be limited to prevention of additional active cutting.

(e) Erosion stabilized by rock pavement.

Proper range management with reduction of livestock to carrying capacity. No structural control measures are justified except those necessary to regulate flood flows.

(f) Geologic or "Z" erosion.

Erosion occurring in areas which under natural environment have never supported sufficient vegetation to effect stabilization.

Proper range management with reduction of livestock to carrying capacity or permanent retirement from use, except for wildlife, is recommended, not necessarily as a treatment measure, but rather to prevent the possibility of future accelerated erosion.

(g) Erosion stabilized, alkali areas.

Proper range management with continued control of livestock from a soil conservation standpoint.

(h) Erosion active, alkali areas.

Proper range management with reduction of livestock to the carrying capacity, or temporary retirement from use, is recommended. No structural control measures should be undertaken until further information is obtained as to the proper type.

PLANTING PLANS

1. That where possible planting areas be designated and needed planting information be placed on the land use map which forms a part of the plan of conservation operations contained within co-operative agreements, supplemented with a brief, clear-cut write-up covering necessary information on planting. This recommendation is based upon the fact that there is a definite need for limiting the number of maps used in preparation of cooperative agreements.

2. That a plan be made for each planting area indicating on a map, chart, or in narrative form, or a combination of these, species to be used, arrangement, type of planting, quantity of material, procedure to be followed in planting, estimates of planting costs, soil characteristics, available moisture, and the necessary protection from rodents or livestock. It is not contemplated that in the plan an accurate map be made of the proposed planting area, but that a sketch map be prepared which will present either a cross-section of the type of planting to be done, or as in the case of woodlots or windbreaks, a sketch showing the arrangement and species to be used. While measurements should be indicated on the sketch it is not necessary that the map be drawn to scale.

3. That a complete plan be prepared and properly approved before planting is started on an area, and that plans be projected for future plantings as far in advance as possible in order to serve as a guide in requesting planting materials.

4. It is particularly important that all plantings be justified on the basis of erosion control needs. Secondary or other uses should be indicated showing that the planting will serve to supply wood, wildlife or other needs.

5. That provision be made in planting plans for recording at the time of planting soil moisture conditions, quantities of materials used, actual cost of the planting operations, and other pertinent information relative to the site which may be important in an analysis of the results obtained as an indication of the reasons for success or failure.

6. That all records pertaining to revegetation be compiled in a suitable manner to present up to date information with respect to all planting, either completed or proposed, for each land unit, the records to be so organized that they may readily be developed to form an up to date and cumulative record for the District.

ARTIFICIAL REVEGETATION

1. All recommendations and resolutions covering artificial revegetation contained herein are contingent upon justifiable cost. This point is worthy of special emphasis.

2. Range management is concerned not only with the preservation of existing desirable plant species, but also with increase in ground cover of these species. The production of additional forage is incidental, under range management, to the primary purpose of soil and moisture conservation and erosion control. Where increase in ground cover of desirable plant species cannot be secured by range management, artificial revegetation may be necessary if soil and moisture conditions are favorable.

3. No large-scale planting program will be undertaken without thorough analysis of soil and moisture conditions, and in the case of proposed large-scale planting of an individual area, the planting shall not be done without the prior establishment of small experimental plantings.

4. Preference will be given to native plants and proven exotics in artificial revegetation. Unproven exotic species that seem to offer promise of success will be tested in controlled plots.

5. No artificial revegetation will be attempted unless sufficient moisture is present or provided for.

6. The use of annuals as a nurse crop with perennial grasses is not recommended because of competition for moisture.

7. No artificial revegetation shall be attempted unless there is assurance that the area is at present, or will be in the near future, protected from grazing animals and rodent activity until the seedling plants have become established.

8. Soil conditions in areas requiring artificial revegetation are generally unfavorable for seed germination and the establishment of seedling plants. The soils division will be consulted in all cases prior to artificial revegetation with reference to character of the soil.

9. Plant species having value for human and wildlife use will be planted in all cases where they serve equally well for erosion control.

10. All channel plantings shall be confined to the sides of the channel unless plant species can be used that will endure covering by flowing water. It is not recommended that channels be restricted or choked by plantings that will cause flood waters to cut around such plantings.

11. In general, it will be advisable to plant gullies on alluvial bottom lands with the objective of healing such gullies. Where plantings do not suffice in themselves, the feasibility of mechanical structures should be considered.

12. Sod grasses rather than bunch grasses shall have priority in all areas adapted to their use.

13. It is recommended that extensive gully plantings made for the purpose of erosion control shall be fenced or be furnished protection through other means.

14. In all gully planting, it is desirable where possible to extend the planting past the shoulder of the gully or stream bank. Such plantings should be in the form of a crescent, convex downstream.

15. It is recognized that, in general, vegetation cannot heal head cutting through alluvial fills. In special instances, the quantity of water dropping over such head cuts may be reduced to the point that eroded materials will not be carried away and natural healing will be effective.

SURVIVAL STUDIES

1. The standard error of the mean in measuring sizeable woodlot and shelterbelt plantings for survival should be placed at 5% plus or minus.

2. For grass and browse plantings an estimate of density is sufficient as applied only to those species planted.

   a. These to be made at beginning of the second growing season.

   b. The Sq. Ft. method of estimating density should be used.

3. For tree planting in gullies for erosion control purposes sample plots should be established and staked out at the time of planting for future measurements. Counts on adjacent parts of the area will be made as a measure of the reliability of the survival estimates obtained on plots and necessary adjustments made.

4. Sufficient intensive survival studies should be made on each District to furnish data necessary for interpretation of results obtained.